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 WOODY,C.O. Florida Power & Light Co.
 RECIP.NAME RECIPIENT AFFILIATION
 GRACE,J.N. Region 2, Ofc of the Director

SUBJECT: Forwards summary of mgt-on-shift weekly repts,per Commission
 871019 order.

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FEBRUARY 10 1988

L-88-66

Dr. J. Nelson Grace
Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
101 Marietta Street, N. W., Suite 2900
Atlanta, Georgia 30323

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Management-on-Shift Weekly Report

Dear Dr. Grace:

Pursuant to the Nuclear Regulatory Commission Order dated October 19, 1987, the attached summary of Management-on-Shift (MOS) reports is submitted.

Should there be any questions on this information, please contact us.

Very truly yours,

DA Sager

C. O. Woody
Executive Vice President

COW/SDF/pw
Attachment

cc: J. Lieberman, Director, Office of Enforcement, USNRC
Dr. G. E. Edison, Project Manager, NRR, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant
R. E. Tallon, President, FPL

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MANAGEMENT ON SHIFT (MOS)

WEEKLY SUMMARY REPORT

WEEK STARTING: FEBRUARY 1, 1988

PAGE 1 OF 2

Four MOS observers were on shift; John A. Dyer, St. Lucie Nuclear Plant, Quality Control Department (02/01-02/07/88, Days); Garry A. Harris, Westinghouse Electric Corporation (02/01-02/08/88, Nights); William C. Miller, Turkey Point Nuclear Plant Senior Technical Advisor (02/01-02/05/88, Nights); and Daniel E. Meils Turkey Point Nuclear Plant Chemistry Supervisor (02/05-02/08/88, Nights).

During this reporting period, Unit 3 was returning from an outage and began the plant startup process. Unit 4 operated at high power levels until inoperable battery chargers on February 7, 1988 forced a plant shutdown.

No immediate safety problems were observed by the MOS observers.

The following questionable work practices were observed:

- o Entry into a highly contaminated area without proper protective clothing.
- o Reactor operator license candidate trainees acknowledging a few routine Control Room annunciator alarms without verbally communicating each repeat occurrence to the Control Room operator.

Over fifteen positive comments were made by MOS observers concerning good team work, the professional environment of the Control Room, housekeeping, conduct of shift turnover meetings and conscientious performance of duties by various plant personnel.

During the period the MOS observers made about twenty eight suggestion for improvements including:

- o Five suggestions for improving procedures in areas such as liquid waste release, Auxiliary Feedwater System testing, Residual Heat Removal valve testing and steam generator filling.
- o Three suggestions to help insure complete, current procedures are always issued for field use.
- o Two equipment labeling suggestions.
- o Six suggestions for additional equipment or improvement of equipment corrections.
- o Three comments on the Emergency Drill conducted on February 4th.

ATTACHMENT: MOS DAILY REPORTS

MANAGEMENT ON SHIFT (MOS)

WEEKLY SUMMARY REPORT

WEEK STARTING: FEBRUARY 1, 1988

PAGE 2 OF 2

A MOS observer again expressed concern about the use of the current Technical Specifications and the Interim Technical Specifications. Specifically during the event dealing with "4S" battery charger operability.

FPL understands that the use of two sets of Technical Specifications presents a new learning experience to the operators and as such, some difficulties are faced until the Interim Technical Specifications are well understood. The issue has been discussed in a recent meeting in Bethesda with NRC management and the issue discussed by the MOS observer should not be construed as new or different evidence. Plant management was fully involved in the event and proper guidance was provided to the Control Room operators.

ATTACHMENT: MOS DAILY REPORTS

To: Operations Superintendent - Nuclear

Date: 02/01/88

From: John A. Dyer
(MOS Observer)Shift: ☒ Day
☐ Night

A. Plant evolutions observed

- Morning meeting
- Shift briefing days and Peak shift
- Review of the following procedures
 - O-ADM-015.3 "Satellite Accumulation of Hazardous Waste"
 - O-ADM-201 "Upgrade Operations Procedure Usage"
 - 4-OSP-075.6 "Auxiliary Feedwater Train 1 Backup Nitrogen Test"
- Observed performance of a portion of 4-OSP-075.6, Auxiliary Feedwater Train Backup Nitrogen Test.

B. Immediate safety problems

None

C. Questionable work practices

None

D. Area(s) for improvement

1. Followup on Satellite Accumulation Area Re: J.A. West MOS report 01/30/88 D 3. Discussed with the "Hazardous Materials Coordinator" specifically O-ADM-015.3 paragraph 5.4 and 5.8.

E. Professionalism, Summary of Shift, Comments

1. Shift briefings, days and peak shift, were very informative. All disciplines participated and had a good understanding of the current status of both units (Good practice).
2. Nuclear operator in charge conducting 4-OSP-075.6 "Auxiliary Feedwater Train Backup Nitrogen Test" conducted a briefing with other personnel involved in the test to ensure their understanding of the test (Good).
3. During performance of the test one step was performed out of sequence. This is not in accordance with O-ADM-201 paragraph 5.1.1 and 5.1.2 requiring verbatim compliance. (Operator repeated in correct order).

02/01/88

F. Recommendations

1. Reference D
A satellite accumulation drum is not required for used oil which itself is not a hazardous waste. Revise O-ADM-015.3 to delete the requirement (paragraph 5.4.4) for a satellite accumulation drum.
2. Reference E
Test 4-OSP-075.6 was delayed 5 hours until I&C could process a PWO to install a test guage. This may have been due to outage on Unit 3 or because test was moved up (Will followup on this item).
3. Nuclear Operations needs more leeway in performing steps out of sequence. The one step performed out of sequence was due to a key being taken from the Control Room to unlock a root valve on a pressure guage.

Completed By: John A. Dyer
MOS ObserverDate: 02/01/88Reviewed By: L.W. Plume
Operations Superintendent-NuclearDate: 2/2/88Management
Review By:

<u>Dyer</u>	<u>1/2/2/88</u>	<u>MO</u>	<u>1/2/2/88</u>	<u>VP</u>	<u>1/2/2/88</u>
PM-N	Date	SVP	Date	VP	Date

MANAGEMENT INITIAL RESPONSE

To: Operations Superintendent - Nuclear

Date: 02/01-02/88

From: Garry A. Harris
(MOS Observer)Shift: ☐ Day
☒ Night

A. Plant evolutions observed

- 4-OSP-075.1 Auxiliary Feedwater Operability Test
- 4-OSP-075.6 Auxiliary Feedwater Nitrogen Backup Test
- Shift Turnover Meeting
- Normal Shift Operations

B. Immediated safety problems

None observed

C. Questionable work practices

None observed

D. Area(s) for improvement

1. While conducting procedure 4-OSP-075.7 Train 2 Back-up Nitrogen Test, the Nuclear Operator was directed by the procedure to "measure and record oil level" (step 7.1.8) for the lube oil sump and governor oil sump. The clause to measure and record requires that the shift indicators should be capable of being recorded in mm or inches or some other dimension, however only gross approximations are available. If this is a requirement, then adequate measures should be taken to ensure that this action can be met.
2. During the execution of procedure 4-OSP-075.7 Train 2 Back-up Nitrogen Test, it was noted that the flow indicators on the Train 2 Auxiliary Feedwater Platform were labeled with pencil etchings to denote Auxiliary Feed Flow to steam generators (i.e. "C", "B", "A"). To ensure accuracy in reporting and eliminate possible confusion, permanent labels should be affixed.

E. Professionalism, Summary of Shift, Comments

1. A strong sense of team work was evident at the shift turnover meeting. All key players were present (i.e. Electrical, Maintenance, I&C Departments) and contributed significantly to the knowledge exchange between all groups.
2. The PSN foreseeing the possibility of the plant experiencing a loss of feedwater transient due to upcoming events reviewed emergency procedures with staff to ensure quick and timely response from all personnel.

F. Recommendations

1. Early in the peak shift, operators and Technical staff personnel attempted a coordinated effort to simultaneously run three procedures 4-OSP-075.1 Auxiliary Feedwater Operability Verification, 4-OSP-075.6 Auxiliary Feedwater Back-up Nitrogen Test and related Inservice Test (IST) procedure. In essence, a noticable lack of manpower and minor communications resulted in missing valve operability data and minor step displacement resulting in a procedure being repeated. Although personnel involved were familiar with the procedures, care should be taken that all parties are aware of procedural content and that the testing is adequately staffed.

Completed By: Garry A. Harris
MOS ObserverDate: 02/02/88Reviewed By: [Signature]
Operations Superintendent-NuclearDate: 2/2/88Management
Review By:

<u>[Signature]</u>	<u>1 2/2/88</u>	<u>[Signature]</u>	<u>1 2/2/88</u>	<u>[Signature]</u>	<u>1 2/2/88</u>
PM-N	Date	SVP	Date	VP	Date

MANAGEMENT INITIAL RESPONSE

To: Operations Superintendent - Nuclear

Date: 02/01-02/88From: William C. Miller
(MOS Observer)Shift: ☐ Day
☒ Night

A. Plant evolutions observed

- Shift turnover
- Shift meetings
- Normal shift operations
- Test Run "3C" RCP

B. Immediate safety problems

None

C. Questionable work practices

None

D. Area(s) for improvement

PSN was quizzing two Nuclear Turbine Operators (NTO) regarding valve locations associated with feedwater supply from fossil Unit 2 and the opposite nuclear unit. Neither NTO displayed strong knowledge of the location of the valves in question.

02/01-02/88

E. Professionalism, Summary of Shift, Comments

1. Good professional shift operations. Operators did good quality shift turnovers and board walkdowns. The shift briefing was well run.
2. Prior to the test run of the "3C" RCP the Chief Electrician joined the NWE and RCO in the Control Room for a planning session. Each person outlined what they were going to do and when they would do it. When the pump run actually took place it was flawless.
3. The RCO's spent any extra time they had training the Group 11 candidates. Informal quiz sessions and formal module checkouts were performed. Challenging questions were asked and the candidates had to research any questions they could not answer.

F. Recommendations

Training Department should evaluate the Nuclear Turbine Operators of unusual feedwater valve alignments. As stated the weaknesses noted were in the identification of alternate flow paths to the steam generators from the opposite nuclear unit and Unit 2. Every NTO should be able to immediately locate the valves in question and align the system.

Completed By: W.C. Miller
MOS Observer

Date: 02/02/88

Reviewed By: R.W. Pearce
Operations Superintendent - Nuclear

Date: 2/2/88

Management
Review By:

PHS 12/2/88 VP 12/2/88 VP 12/2/88
PM-N Date SVP Date VP Date

MANAGEMENT INITIAL RESPONSE

To: Operations Superintendent - Nuclear

Date: 02/02/88

From: John A. Dyer
(MOS Observer)Shift: ☒ Day
☐ Night

A. Plant evolutions observed

- Morning meeting
- Shift briefings (Days and Peaks)
- Review of procedures
 - 3-OP-041.8 "Filling and Venting The Reactor Coolant System".
 - AP-0190.86 "Document Control"
- Plant tour with the Plant Supervisor Nuclear.
- Filling Unit 3 Reactor Coolant System (Control Room).
- Unit 4 Turbine oil temperature reduced to check effect on turbine vibration. Westinghouse representative was in attendance.

B. Immediate safety problems

None

C. Questionable work practices

None

D. Area(s) for improvement

None

E. Professionalism, Summary of Shift, Comments

1. Normal shift operations. Unit 4 at 100% power. Unit 3 Reactor Coolant System filling in progress.
2. Significant Condition Adverse to Quality
 - Instrumentation and Control Technicians caused a Control Room Isolation while working in the Process Radiation Monitoring System Racks (Actuation of Engineered Safety Feature).
 - The Nuclear Regulatory Commission was notified in accordance with Administrative Procedure 0103.12.
 - Control Room Isolation caused by work in the Process Radiation Monitoring System Racks is a recurring problem. The Instrumentation and Control Department conducted a meeting to determine the root cause of the problem.
3. All plant areas toured were clean - Good housekeeping practices.
4. All personnel observed in hearing protection areas had ear protection.

F. Recommendation

None

Completed By:

John A. Dyer
MOS ObserverDate: 02/02/88

Reviewed By:

L.W. Pearce
Operations Superintendent - NuclearDate: 2/3/88Management
Review By:PM-N / Date SVP / Date VP / Date

MANAGEMENT INITIAL RESPONSE

To: Operations Superintendent - Nuclear

Date: 02/02-03/88

From: Garry A. Harris
(MOS Observer)Shift: ☐ Day
☒ Night

A. Plant evolutions observed

- Filling and Venting the Reactor Coolant System 3-OP-041.8
- Unit 3 Reactor Head/Control Rod Drive Mechanism (CRDM) Duct work reassembly.
- Unit 3 Standby Steam Generator Feedpump Surveillance Test
- Unit 4 100% normal operation
- Shift meeting
- Shift turnover meeting

B. Immediate safety problems

None observed

C. Questionable work practices

None observed

D. Area(s) for improvement

None observed

E. Professionalism, Summary of Shift, Comments

None observed

F.

Recommendations

The critical path events for completing Filling and Venting procedure 3-OP-041.8 were hampered due to testing being performed on valve 863A with MOVATS equipment. A PWO (C309916) had earlier been written for this component when a Control Room hand switch failed to close the valve unless it was held in the closed position. The test path chosen by the on-shift personnel required the closing of the RHR heat exchanger inlet and outlet valves 755A and 757A. This operation was necessary since an interlock on the upstream valves 863A/B would close these valves if RHR pump discharge pressure is greater than 210 psig. The manual heat exchanger isolation valves are very time consuming to close. In addition, with the isolation valves closed, the associated RHR loop becomes inoperable. Mode 5 (cold shutdown) requirements (AP-0103.32 page 2 step 4.10.1) state the need for two operable coolant loops - one reactor coolant loop and one RHR loop or two RHR loops. Thus extensive operations were conducted to meet this requirement upon isolation of the RHR loop. Although the 863A RHR Alternate Discharge Isolation Valve was found operable late in the mid-shift, it is possible that critical path hours could have been saved by pre-planning and using an established method of testing the valve's operability. According to OP-0209.1, page 28, Appendix B, sheet 7 of 11, the valve in question should have been tested using procedural 3/4 OP-050 step 7.2, Transferring to Alternate RHR Cooldown Lineup. According to the procedure the alternate RHR discharge valves should be tested in this lineup instead of the lineup utilized. Although utilizing this procedure would have required depressurizing the RCS to approximately 80 psig, the effort seems efficient and feasible. The concern that extensive steps in the fill and vent procedure would have to be repeated is eliminated since pressurizer level would not decrease below 10%. The effort to take an RHR loop out of service and establish an operable RCS loop would be eliminated. It is recommended that future operability testing of Alternate RHR Discharge Isolation Valves 863 A/B be performed according to OP-0209.1 Appendix B.

Completed By: Garry A. Harris
MOS Observer

Date: 02/03/88

Reviewed By: *S.W. Pance*
Operations Superintendent-Nuclear

Date: 2/3/88

Management
Review By:

PM-N / Date SVP / Date VP / Date

To: Operations Superintendent - Nuclear

Date: 02/02-03/88

From: William C. Miller
(MOS Observer)Shift: ☐ Day
☒ Night

A. Plant evolutions observed

- Shift turnover - RCOs and NWEs
- Shift briefing
- Steam Generator drain down
- System alignment for fill and vent
- NTOs performing log readings
- Standby Steam Generator Feedpump Operability Test

B. Immediate safety problems

None

C. Questionable work practices

None

D. Area(s) for improvement

Nuclear Turbine Operators (NTO) had to share thermometers and hydrometers between batteries. Surprisingly, this significantly added to the time required for him to monitor batteries. Especially time consuming was the wait for thermal equilibrium to be reached every time he moved the thermometer from one battery to the next. I received new insight into how busy the NTO is during his shift. If we can save him even a few minutes (approximately 15-20 minutes could have been saved this evening), that few minutes could be well spent elsewhere.

E. Professionalism, Summary of Shift, Comments

I followed an NTO through rounds and was very impressed by the work load he faced and by the careful manner in which he went about his business. He was well trained and very conscientious about doing a good job. The secondary plant looked quite clean, and no serious problems were encountered during these rounds.

F. Recommendations

Purchase enough thermometers and hydrometers to ensure enough are available for each battery plus spares.

Completed By: W.C. Miller
MOS Observer

Date: 02/03/88

Reviewed By: J.W. Pearce
Operations Superintendent- Nuclear

Date: 2/3/88

Management
Review By:

PM-N / Date SVP / Date VP / Date

MANAGEMENT INITIAL RESPONSE

To: Operations Superintendent - Nuclear

Date: 02/03/88

From: John A. Dyer
(MOS Observer)Shift: ☒ Day
☐ Night

A. Plant evolutions observed

- Morning meeting
- Shift briefings (Days and Peaks)
- Planning meeting
- Plant tour of vital areas outside of the Radiation Control Area
- Procedure review
 - 3-GOP-503 "Cold Shutdown to Hot Standby"
 - O-OSP-200.2 "Plant Startup Surveillances"
 - 3-OSP-041.7 "RCS Heatup and Cooldown Temperature Verification"
- Venting of the Reactor Coolant System in accordance with procedure 3-OP-041.8

B. Immediate safety problems

None

C. Questionable work practices

None

D. Area(s) for improvement

None

E. Professionalism, Summary of Shift, Comments

1. Good housekeeping practices in all areas toured.
2. Good exchange of information at the shift briefings.
 - Plant Supervisor Nuclear discussed how all plant personnel (Operations, Technical Staff, Maintenance, etc.) should work together as a team in the reduction of significant events. He used the event discussed on 02/02/88 as an example. This was well received and several constructive responses were noted.
 - STA indicated that a change to O-ADM-701 "Plant Work Order Preparation" would probably be recommended to reduce maintenance related events.
- RCO trainees were utilized as much as possible in the Reactor Coolant System Venting Evolution. The senior RCO asked the trainees pertinent questions as part of the operation training.
 - Subsequent to the shift briefing by the Plant Supervisor Nuclear (PSN) the senior RCO conducted a more detailed briefing with those specifically involved with the RCS venting process (Good practice).

02/03/88

F. Recommendations

None

Completed By:

John A. Dyer
MOS ObserverDate: 02/03/88

Reviewed By:

J.W. Pearce
Operations Superintendent- NuclearDate: 2/4/88Management
Review By:CPS 12/4/88 JS 12/4/88 1
PM-N Date SVP Date VP Date

MANAGEMENT INITIAL RESPONSE

02/03/88

To: Operations Superintendent - Nuclear

Date: 02/03-04/88

From: Garry A. Harris
(MOS Observer)Shift: ☐ Day
☒ Night

A. Plant evolutions observed

- Unit 4 Diesel A Operability Test O-OSP-023.1
- Unit 3 RHR pump A valve out operations
- Unit 4 Turbine eccentricity problem
- Unit 3 Filling and Venting procedure 3-OP-041.8
- Unit 4 Test procedure 398 Emergency Containment Cooler Periodic Test
- Shift turnover meeting
- Normal operations

B. Immediate safety problems

None observed

C. Questionable work practices

None observed

D. Area(s) for improvement

- Quality job performance demands operable quality tooling. While conducting clearance operations on Unit 3 RHR pump A, the nuclear operators were required to close and lock shut several valves. Pure manual manipulation of the valves is cumbersome and exhaustive since hundreds of turns are needed to close each valve. Thus, the operators use an air-operated wrench to aid in the closure of the valves. With the wrench, the operators managed to close the valves. However, to facilitate its use one operator had to control air flow by crimping the supply hose, while the other engaged the tool. Obviously, quality and safety go hand in hand but the use of such tooling becomes a source of aggravation for the operators and could affect performance.

E. Professionalism, Summary of Shift, Comments

1. Zeal, enthusiasm and attention to detail were all extremely evident during the Diesel Operability Test. The turbine operator was knowledgeable of the procedure and each intricate step displayed pride and quality-first attitude to the task at hand.
2. Good communications resulted in a smooth transition from the fill and vent operations to the critical path RHR pump evolutions.

F. Recommendations

1. Ensure operators (turbine/nuclear) are provided proper tools which are fully functional to preclude any questionable safety practices. The review should extend beyond the example presented in section D.

Completed By: Garry A. Harris
MOS ObserverDate: 02/04/88Reviewed By: *J. W. Pearce*
Operations Superintendent- NuclearDate: 2/4/88Management
Review By:

<u><i>CPS</i></u>	<u>12/4/88</u>	<u><i>JW</i></u>	<u>12/4/88</u>	<u>1</u>	<u></u>
PM-N	Date	SVP	Date	VP	Date

MANAGEMENT INITIAL RESPONSE

To: Operations Superintendent - Nuclear

Date: 02/03-04/88

From: William C. Miller
(MOS Observer)Shift: ☐ Day
☒ Night

A. Plant evolutions observed

- Shift turnover - PSN
- Shift briefing
- Emergency Diesel Generator "A" Operability Run
- Toured Auxillary Building and Rad Waste Building
- Observed operators evaluating and attempting to correct the cause of high vibration on #9 bearing on Unit 4 turbine.
- Normal plant operations

B. Immediate safety problems

None

C. Questionable work practices

None

D. Area(s) for improvement

1. #3 CCW heat exchanger room - Housekeeping needs improvement. Area is cluttered and dirty.

E. Professionalism, Summary of Shift, Comments

- Relatively quiet shift with no significant operational issues.
- During tour of Auxillary Building I observed Health Physics personnel at their posts and assisting plant workers. They were courteous and attentive to their job. They maintained a presence at the new whole body friskers and briefed people exiting the RCA in their use. Overall they exhibited very professional behavior.

F. Recommendations

Have someone address the housekeeping of #3 CCW heat exchanger room.

Completed By: William C. Miller
MOS Observer

Date: 02/03-04/88

Reviewed By: J.W. Pearce
Operations Superintendent - Nuclear

Date: 2/4/88

Management
Review By:

PM/N 12/4/88 SVP 2/4/88 VP 1 Date

To: Operations Superintendent - Nuclear

Date: 02/04/88

From: John A. Dyer
(MOS Observer)Shift: ☒ Day
☐ Night

A. Plant evolutions observed

- Morning meeting
- Practice Emergency Drill
- Shift briefings
- Plant tours-Radiation Controlled Area and balance of plant

B. Immediate safety problems

None

C. Questionable work practices

None

D. Area(s) for improvement

Non-Controlled Procedures - refer to sections E and F procedure comments and recommendations.

02/04/88

E. Professionalism, Summary of Shift, Comments

1. Practice Emergency Drill
 - a) In addition to the normal shift compliment, there were ten (10) players and/or controllers and three (3) NRC observers. Thirteen (13) additional personnel in an already crowded Control Room. In spite of the number of personnel the reactor control operator maintained control (Good work on the part of the operator).
 - b) A fire drill was announced, but it was not correctly announced as part of the Emergency Drill. There was some confusion as to who should respond to the fire drill; the normal shift fire team on the drill fire team. The Nuclear Watch Engineer took immediate action to alert the shift fire team not to respond so they would be available to support plant evolutions (Good work on the part of the Watch Engineer).
 - c) The Emergency Drill Coordinator had forgotten to provide for an Emergency Drill Fire Team.
2. Uncontrolled or Non-Controlled procedures are verified against an "Upgrade Procedure Index" which is not a controlled document. This is not in accordance with Quality Assurance Manual Procedure QP 6.2 rev. 5 paragraph 5.4.
3. Shift briefings continue as a highpoint. Maintenance (mechanical) had some good feedback on how to aid in reaching the 200°F milestone. The Plant Supervisor Nuclear complimented the Maintenance Foreman on his suggestions. Good meeting.

F. Recommendations

Reference section E.

1. Drill Coordinator could make better utilization of:
 - a) Experienced personnel and reduce the number of players/controllers in the Control Room.
 - b) One (1) NRC observer should be sufficient during the drill; especially in the Control Room.
 - c) Better preplanning and coordination with Operations prior to practice Emergency Drills.
2. Procedures
 - a) Administrative Procedures O-ADM-201 and AP-0190.86 require verification of Non-Controlled documents against the "Upgrade Procedure Index" on the "Document Control Spare Copy File Index". Neither of these indexes is a controlled document. Make the indexes controlled or revise the aforementioned procedures to require document verification against a controlled document.

F. Recommendations (Continued)

- b) Change Figure 1 Item D of AP-1090.86 to a stamp similar to:

FOR INFORMATION ONLY

Before use verify with a controlled copy and verify if document is affected by an On The Spot Change (OTSC)

Date verified: _____ Initial _____

- c) Provide operations with a stamp as recommended in item 2:
-
- O-ADM-201 permits use of attachments on sections of procedures. These portions of procedures should be stamped and verified prior to use in the field to ensure use of current procedures.

Completed By: John A. Dyer
MOS ObserverDate: 02/04/88Reviewed By: [Signature]
Operations Superintendent- NuclearDate: 2/5/88Management
Review By:[Signature] 12/15/88 1
PM-N Date SVP Date VP Date

FINAL PAGE

To: Operations Superintendent - Nuclear

Date: 02/04-05/88

From: Garry A. Harris
(MOS Observer)Shift: ☐ Day
☒ Night

A. Plant evolutions observed

- Vital power supply (Battery) periodic test - Units 3 and 4
- O-OSP-059.1 Source Range Operability Test - Unit 3
- MOVAT Test for 749A RHR A CCW outlet valve - Unit 3
- Plant tour
- Shift turnover meeting
- Start-up Transformer Periodic Test - Units 3 and 4
- Turbine vibration problem - Unit 4
- Unit 4 power operations at 100%

B. Immediate safety problems

None observed

C. Questionable work practices

None observed

D. Area(s) for improvement

1. Standby inverters A, B, C, and D are common alternates to supply vital buses. As an example, Standby inverter A can supply 3P07 or 4P07; Standby inverter B can supply 3P08 or 4P08, etc. Extensive efforts have been made to lessen operator error by the use of the blue-Unit 4/brown-Unit 3 color designations. Since common equipment exists that serves both units, the appropriate color coordination should be extended to the standby inverter units.
2. In the cable spreading room it was noticed that a free-standing protective screen was placed at the rear of panel 3C11(G) (Gen. and Main Relay/Auxiliary Startup Transformer panel). It was communicated to the MOS observer that the screen was in place as precaution against inadvertent reactor trips caused by jarring of generator protection relays. The 3C11(T) panel stands adjacent to the previously mentioned panel and is a mirror image of it in design and function. However, no screens are present to prevent on inadvertent reactor trip. Even though area is posted, travel through it is still possible and frequent.

E. Professionalism, Summary of Shift, Comments

A strong sense of teamwork was evident during MOVATs testing of MOV-749A.

F. Recommendations

1. The color orange is used to designate common vital equipment between the units, thus the Inverters should be affixed with orange emblems labeling them as such.
2. A similar free-standing screen should be placed at the rear of the panel to shield the exposed protective relays.

Completed By: Garry A. Harris
MOS Observer

Date: 02/05/88

Reviewed By: *[Signature]*
Operations Superintendent- Nuclear

Date: 2/5/88

Management Review By: *[Signature]* 1-2/5/88 1 1
PM-N Date SVP Date VP Date

MANAGEMENT INITIAL RESPONSE

To: Operations Superintendent - Nuclear

Date: 02/04-05/88

From: William C. Miller
(MOS Observer)Shift: ☐ Day
☒ Night

A. Plant evolutions observed

- Shift turnover - PSN and NWE
- Shift briefing
- Startup Transformers Periodic Test
- Site Evacuation Alarm Periodic Test
- System walkdowns in preparation for mode change
- Normal plant operations

B. Immediate safety problems

None

C. Questionable work practices

None

D. Area(s) for improvement

Operations again spent the night trying to control #9 turbine bearing vibration. Lube oil temperatures, Hydrogen side and Air side seal oil temperatures were all manipulated in an attempt to reduce vibration. I do not see evidence of this problem having been evaluated by Engineering personnel (Plant or Engineering). Instead the operators continue to try to deal with it on a daily basis, applying remedies that appear to be effective one time and are ineffective the next.

E. Professionalism, Summary of Shift, Comments

Professional attitudes displayed by all personnel observed especially Turbine Operators who worked diligently the entire shift.

F. Recommendations

I recommend that the Technical Department investigate the turbine bearing vibration problem and give Operations some guidance on how to solve the problem instead of merely living with it:

Completed By: William C. Miller
MOS Observer

Date: 02/05/88

Reviewed By: L. W. Pearce
Operations Superintendent - Nuclear

Date: 2/5/88

Management
Review By:

77/88 1 2/5/88 1 1
PM-N Date SVP Date VP Date

MANAGEMENT INITIAL RESPONSE

To: Operations Superintendent - Nuclear

Date: 02/05/88

From: John A. Dyer
(MOS Observer)Shift: ☒ Day
☐ Night

A. Plant evolutions observed

- Morning meeting
- Shift briefings
- Control Room Operations
- Plant tours
- Plant Operations
 - Unit 3 Pressurizer heaters and "B" RCP operating. Heating up to less than 200°F and drawing a bubble in pressurizer.
 - Unit 4 in Mode 1 at 100% power

B. Immediate safety problems

None

C. Questionable work practices

None

D. Area(s) for improvement

1. Adherence to Administrative Procedures
2. Clarification on documentation of verification that documents/procedures are current (Refer to section F).

E. Professionalism, Summary of Shift, Comments

1. Turbine impeller oil pressure problem recurred again this morning. Supervisor explained what might occur and what corrective actions should be taken. He explained that trainees were to stand aside, if an event did occur, and the reactor control operator would take corrective action. Subsequently trainees would discuss the operation with the reactor control operator.
2. It was noted that operators were not conforming to paragraph 5.3.7 of O-ADM-201 requiring sections 1, 2, 3, and 4 of the procedure in use to be attached to sections or attachments of the procedure being used. This was brought to the attention of the Plant Supervisor Nuclear who immediately explained the requirement to the operators. In addition, he made an entry in the "Shift Information Book" so that subsequent shifts would be reminded of this requirement.
3. Plant Supervisor Nuclear reminded all personnel that this was a busy time in preparing to return Unit 3 to service. He informed personnel that it was more important that work was to be performed correctly than it was for it to be performed quickly. He stated that if they felt they were being asked to do too much, just to let him know.

F. Recommendations

(See D.2)

1. Guidance is given to personnel in Administrative Procedure 0190.86 "Document Control" paragraphs 4.4, 5.2.9, 8.1.4, 8.2.4.2 and 9.9.4 on documentation of verification of "On the Spot Changes" to ensure they are current.
2. Administrative Procedures 0190.8 and O-ADM-201 require in paragraphs 4.1, 5.7.7, 8.1.11, 8.2.3 and 8.2.4.1 and 5.3.1 and 5.4.1.3 respectively that procedures/documents be verified to be current prior to use. No guidance is given on how to document this verification. This is necessary so personnel, especially Operations, can be consistent. These procedures need to be revised and perhaps a stamp as recommended on my 02/04/88 report could be used. The PSN suggest that verification could be made part of every procedure's prerequisites.

(See D.1)

3. Stress administrative duties in the operator training and requalification programs.
4. PSNs should frequently stress the importance of administrative duties at shift briefings. This should reduce NRC violations due to administrative problems.

Completed By: John A. Dyer
MOS ObserverDate: 02/05/88Reviewed By: J. A. Dyer
Operations Superintendent - NuclearDate: 2/5/88Management
Review By:C/JB 12/8/88 C/JB 12/8/88 1
PM-N Date SVP Date VP Date

MANAGEMENT INITIAL RESPONSE

To: Operations Superintendent - Nuclear

Date: 02/05-06/88

From: Garry A. Harris
(MOS Observer)Shift: ☐ Day
☒ Night

A. Plant evolutions observed

- GMI-028.4 CRDM and RPI cable installation
- Unit 4 Turbine evolutions
- Unit 3 in Mode 5 operations
- Unit 4 at 100% power operations

B. Immediate safety problems

None observed

C. Questionable work practices

- Trainees enthusiasm and attention to details is always highly visible and commendable during shift operations. However, it has been observed several times during the peak and mid shifts that trainees are acknowledging alarms without direct verbal communications between himself and the RCO. Although only routine annunciators seem to fall in this category, it was clearly noticed that several times an alarm was acknowledged. A strong reminder is in order to ensure that RCO board responsibilities are not compromised.

D. Area(s) for improvement

1. It was noted on an earlier report that operators were not conforming to paragraph 5.37 of O-ADM-201 requiring sections 1, 2, 3, and 4 to be attached to sections or attachments of a procedure in use. PSNs quickly remedied this situation by formal announcements during shift meetings and turnover meetings by the MOS observers. However during observation of CRDM cable repair by I&C technicians, none of the sections were attached to the section of the procedure in use. I&C technicians must be aware of the precautions and limitations in the above mentioned sections to ensure a quality job.

E. Professionalism, Summary of Shift, Comments

1. The peak shift PSN should be commended for his initiative and creativity in problem solving and use of good sound engineering judgement during the review of impeller oil pressure induced transient. Positive input from key management personnel showed strong justification of his ideas.
2. The mid shift PSN and operators did an excellent job of implementing the agreed upon power manipulations to find the root cause of the impeller oil pressure problem. The mid shift PSN and APSN ensured all personnel were well informed of the "game plan" and subsequent actions if the testing maneuver led to a trip. Good communication and well thought out methodical steps led to an event free scenario. The trainees performed the power reduction in near text book fashion.
3. Group cooperation and team pride were instrumental in the critical path RHR "A" pump repair being completed nearly seventeen hours ahead of schedule.
4. It was the concern of this MOS observer that with the critical path installation of RPI cabling nearly 20 hours behind schedule only two technicians were assigned to perform the procedural pre-installation testing and cabling hookup. Both technicians worked diligently to facilitate the installation.

F. Recommendations

1. Ensure all departments are aware of the MOS observation noted by J. Dyer on his report of 02/04/88, section F.2 and are in compliance. Note that section 8.2.2 of AP-0109.1 references O-ADM-201 for procedural adherence policy.

Completed By: Garry A. Harris
MOS ObserverDate: 02/06/88Reviewed By: *[Signature]*
Operations Superintendent-NuclearDate: 2/8/88Management
Review By:

<u><i>CJB</i></u>	<u>12/3/88</u>	<u><i>CJB</i></u>	<u>12/3/88</u>	<u>1</u>	<u> </u>
PM-N	Date	SVP	Date	VP	Date

To: Operations Superintendent - Nuclear

Date: 02/05-06/88

From: Daniel E. Meils
(MOS Observer)Shift: ☐ Day
☒ Night

A. Plant evolutions observed

- Unit 3 - RCO rounds
- Unit 3 - Drain of "A" and "C" Steam Generators
- Liquid release (C-WMT LRP-88-044)
- Unit 4 decrease in power to adjust impeller oil pressure
- Shift briefings
- Nuclear Operator (NO) "outside" rounds

B. Immediate safety problems

None

C. Questionable work practices

1. Entry into a highly contaminated area without proper protective clothing (PC's).

D. Area(s) for improvement

1. OP-5163.2 "Waste Disposed System - Controlled Liquid Release to the Circulating Water" step 8.2.2 requires the Nuclear Operator (NO) to have the RCO perform 3-OSP-67.1 "Process Radiation Monitoring Operability Test". Step 8.2.2.1 of OP-5163.2 require a source check of R-18, however the source check is not referenced in OSP-067.1. As a result of this omission in OSP-067.1, the source check of R-18 was not performed prior to releasing the C-WMT, LRP-88-044.
2. While observing the Nuclear Operator perform "outside" rounds two areas for improvement were noted:
 - a) Unit 4 SFP heat exchanger room is very noisy.
 - b) Entry into a high contamination area in Unit 3 SFP heat exchanger room without the proper PCs.
3. Several employees were observed taking a short cut down the embankment south of Unit 4 containment between the Unit 4 SFP heat exchanger room and the Rad Waste Building.

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E. Professionalism, Summary of Shift, Comments

1. Shift turnover was well structured. PSN, APSN and NWE all participated in giving clear instructions for the shift.
2. The RCO's and NO's were congenial and discussed evolutions freely and openly.
3. The NO on shift went out of his way to check operability of all equipment.

F. Recommendations

1. Evaluate the need to perform R-18 operability and source checks prior to every liquid release. Change procedures OP-5163.2 and OSP-067.1 as necessary (See D.1).
2. Evaluate the need for additional marking of highly contaminated areas within contaminated areas. Possible addition of more visual designation of high contaminated areas. Also, evaluate the extent of this problem and upgrade knowledge/awareness as indicated (See D.2.f).
3. Evaluate hearing protection requirements for Unit 3 and 4 SFP heat exchanger rooms and post hearing protection requirements, as necessary (See D.2.a).

Completed By: Daniel E. Mells
MOS Observer

Date: 02/06/88

Reviewed By: [Signature]
Operations Superintendent- Nuclear

Date: 2/5/88

Management Review By: [Signature] 12/8/88 [Signature] 12/8/88 [Signature] 12/8/88
PM-N Date SVP Date VP Date

MANAGEMENT INITIAL RESPONSE

02/05-06/88

To: Operations Superintendent - Nuclear

Date: 02/06/88

From: John A. Dyer
(MOS Observer)Shift: ☒ Day
☐ Night

A. Plant evolutions observed

- Plant operations
- Tour of radiation control areas
- Morning meeting
- Planning meeting

B. Immediate safety problems

None

C. Questionable work practices

None

D. Area(s) for improvement

1. Administrative guidelines clarification (Refer to section F).
2. Procedure/System interactions (Refer to section F).

E. Professionalism, Summary of Shift, Comments

1. Again shift briefings continue as a highpoint. A lot of information on plant status and shift goals is discussed. This is a two way transfer of information between all concerned and everyone has an understanding of the evolutions schedule to occur on their shift.
2. There is still some confusion/misunderstanding among shift personnel as to the use of the stamp depicted in Administrative Procedure 0190.86 figure/item. Some personnel thought that the shift technician was responsible for filling it out. There were occasions today where procedures were either in progress or completed and the stamp was not completed. The supervisors on shift took immediate action when notified (Refer to section F).
3. A dump flush of Unit 3 condensor was completed through paragraph 5.2.2.b of 3-OP-073 "Condensate System. A problem was encountered in closing the recirculation valve to the canal 3-FDWR-010 when the dump was completed. The supervisor decided to commence filling "3C" steam generator using 3-OP-079 "Steam Generator Wet Layup System" while valve 3-FDWR-010 was being repaired. After approximately one hour no level increase was evident in the "C" generator. Shift investigation revealed the water was being pumped to the canal and filling of "C" generator was terminated (Refer to section F). The supervisor was to contact the Procedures Upgrade Program Department to resolve this item.

02/06/88

F. Recommendations

(Refer to E.2 and D.1)

1. The recommendations made on the day shift MOS reports of 02/04/88 and 02/05/88 in regard to administrative areas still apply. In addition perhaps the PSN, APSN or the NWE should check procedures prior to use until these administrative duties are clarified.

(Refer to D.2 and E.3)

2. Procedures 3-OP-073 and 3-OP-079 appear to be frequently used in conjunction with one another. Caution notes should be added to alert personnel of problem areas or perhaps requisite section revised to preclude this problem.

Completed By: John A. Dyer
MOS ObserverDate: 02/06/88Reviewed By: 1
Operations Superintendent- NuclearDate: 2/1/88Management Review By: (11) 12/5/88 (11) 12/5/88 1
PM-N Date SVP Date VP Date

MANAGEMENT INITIAL RESPONSE

To: Operations Superintendent - Nuclear

Date: 02/06-07/88

From: Garry A. Harris
(MOS Observer)Shift: ☐ Day
☒ Night

A. Plant evolutions observed

- CV-3-1606 "3A" Steam Dump to Atmosphere body/bonnet repair
- Turbine crane hook inspection
- RPI and CRDM installation - Unit 3
- "4S" Battery Charger inoperability - Unit 4
- "3A" RHR Inservice Test - Unit 3 OSP-050.2
- Turbine vibration problem - Unit 4
- Unit 4 normal operations - 100%
- Shift meeting
- Shift turnover meeting

B. Immediate safety problems

None observed

C. Questionable work practices

None observed

D. Area(s) for improvement

1. During the Inservice Test of "3A" RHR pump it was noted that a support for interconnecting piping was left off and stored randomly on the floor. Interconnecting piping for safety related equipment should be supported to ensure continued operability of the pump.

E. Professionalism, Summary of Shift, Comments

1. Continued observations of Unit 4 turbine vibration problem show that careful methodical steps are being taken by peak and mid shift personnel to fine tune the correlation between lube and seal oil temperatures and the rise and fall of the recorded vibrations.
2. Unit 4 "4S" battery charger was declared inoperable which placed the unit in a 24 hour LCO. Electrical Maintenance gave prompt attention to the matter.
3. An Inservice Test 3-OSP-50.2 was preferred on RHR pump "3A". Technical Staff personnel promptly summoned Mechanical Maintenance to the scene. In the mean time, the nuclear operator continuously searched the pump for clues, and personnel monitored local and Control Room indications (i.e. amperage, flow, tell tale seal leakage, vibrations) for abnormal conditions. All appeared normal. Mechanical Maintenance personnel arrived on the scene and after a thorough inspection surmised the problem to be with and oscillating fiber ring. The test was continued and completed without any further problems. Good group cooperation was responsible for immediate and prompt analysis of the problem. However, a final resolution is still pending.

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F. Recommendations

1. Install missing support near the "3A" RHR pump immediately.

Completed By: Garry A. Harris Date: 02/07/88
MOS Observer

Reviewed By: [Signature] Date: 2/7/88
Operations Superintendent- Nuclear

Management Review By: CJB 1:2/88 CJB 1:2/88 1
PM/N Date SVP Date VP Date

MANAGEMENT INITIAL RESPONSE

02/06-07/88

To: Operations Superintendent - Nuclear

Date: 02/06-07/88

From: Daniel E. Mells
(MOS Observer)Shift: ☐ Day
☒ Night

A. Plant evolutions observed

- Toured Auxilliary Building
- Toured Containment
- RCO shift turnover
- PSN shift turnover
- CRDM coil stack repair (G-5)
- Turbine operator 1300 rounds

B. Immediate safety problems

None

C. Questionable work practices

None

D. Area(s) for improvement

None

E. Professionalism, Summary of Shift, Comments

- Continued good communications between and among shift players.
- Tour of Auxilliary Building and Containment satisfactory.
- RCO and PSN turnovers were structured and informative.
- CRDM coil stack repair went very smoothly. Due primarily to a new tool that Vern Miller has designed to pull the coil stack. It not only expedites I&C work, it also reduces Man Rem exposure.
- 1300 hour turbine operator rounds were very well executed.

F. Recommendations

None

Completed By: Daniel E. Mells
MOS Observer

Date: 02/07/88

Reviewed By: [Signature]
Operations Superintendent - Nuclear

Date: 2/8/88

Management
Review By:

<u>C/B</u>	<u>12/8/88</u>	<u>C/B</u>	<u>12/8/88</u>	<u>1</u>
PM-N	Date	SVP	Date	VP

To: Operations Superintendent - Nuclear

Date: 02/07/88

From: John A. Dyer
(MOS Observer)Shift: ☒ Day
☐ Night

A. Plant evolutions observed

- Morning meeting
- Shift briefings
- Tour of Radiation Controlled areas including the Containment Building
- - Down power of Unit 4 due to LCO (Interim T.S.) being reached on "4" Spare Battery Charger. Power down to 70% 4-GOP-103
- - Power increase (Plant managers go ahead) 4-GOP-301
- Unit 3 pressurizer level indicators back in service. Bubble formation in progress.
- "4" Spare Battery Charger back in service. Shortly after "4" spare was put into service "3B" failed.
- ERT looking into Battery Charger problems, may be generic. ERT determined Charger problem generic. Unit 4 commenced power reduction at 1700. Going to cold shutdown.

B. Immediate safety problems

None

C. Questionable work practices

None observed

D. Area(s) for improvement

1. Current Technical Specifications
 2. Interim Technical Specifications
 3. Justification for Continued Operation (JCO's)
- These are all one item

E. Professionalism, Summary of Shift, Comments

- Shift turnovers and briefings continue to be detailed and thorough with feedback from attendees. Supervisors always ask for comments from participants.
- Supervisors on site approximately one hour ahead of schedule to get a good update on plant status.
- Before downpower operation evolution was thoroughly explained and discussed. RCO trainees on shift performed the power decrease. Good interaction between the RCO trainees and the RCO.
- The operators are working a lot of long hours but spirits remain high. The supervisors ensure that the operators with the longest hours on shift have the least stressful jobs.
- Overall plant housekeeping is good.

02/07/88

F.

Recommendations

(Reference section D)

Much confusion exist with personnel having to make interpretations and judgements using current Technical Specifications, Interim Technical Specifications, and/or Justification for Continued Operations (JCO's). This was very evident when the time ran out on the Limiting Condition for Operation (LCO) on the "4" spare Battery Charger. The Interim or Standard Technical Specifications need to be made part of the license as soon as possible to alleviate this confusion. In the meantime when the plant gets into a grey area on LCO's, decisions should be made early on so the shift supervisor do not get into these stressful situations.

Completed By:

John A. DyerMOS ObserverDate: 02/07/88

Reviewed By:

Operations Superintendent- NuclearDate: 2/7/88Management
Review By:1/7
PM-N1-14/88
Date(1/7)
SVP1-14/88
Date1
VP1
Date

MANAGEMENT INITIAL RESPONSE

02/07/88

To: Operations Superintendent - Nuclear

Date: 02/08/88

From: Garry A. Harris
(MOS Observer)Shift: ☐ Day
☒ Night

A. Plant evolutions observed

- Unit 4 - Left stop valve closure on ramp down
- Unit 4 - RCS cooldown down and taking data per 4-OSP-041.7
- Unit 3 - RCS Cold Shutdown to Hot Standby 3-GOP-503
- Unit 3 - Rod Control Testing - OP-1604.9
- Shift meeting
- Shift turnover
- Plant tour

B. Immediate safety problems

None observed

C. Questionable work practices

None observed

D. Area(s) for improvement

None observed

E. Professionalism, Summary of Shift, Comments

While preceding to rampdown to hot standby conditions due to the inoperability of the "4A" battery charger, the left stop valve of the Unit 4 turbine suddenly went closed (Unknown to the operator at the time). In response the appropriate annunciators and alarms were activated. The trainees who were conducting the controlled shutdown were immediately replaced by senior personnel. Immediate and concise communications between all operators and the PSN were initiated. The PSN, in an attempt to structure the analysis, placed the RCO in charge. The RCO promptly analyzed the problem to be due to the closure of the left stop valve. Immediately decisions were made on the best method to proceed without worsening the problem. Meanwhile, the remaining personnel fought rapidly sinking steam generator levels and turbine/reactor power mismatch. With delta flux target driven low due to rods, boration and steam dump actuation it was feared that further manipulation of the left stop valve might induce a safety injection signal due to increased steam flow. (The transient caused turbine load to drop from 480 MW to 70MW. Initially rods were in manual, thus dumps carried approximately 55% steam flow which is above their design valve. A decision was made to open further the right stop valve. The valve was opened and the turbine reloaded to 430 MW. The operators stabilized the plant at approximately 350 MW. Still implementing an earlier devised "game plan" the RCO ordered the ramp down to increase because of the steam/feed flow imbalance and possible worsening of the transient due to the left stop valve (Feared that valve may open and stick in position). Turbine operators were dispatched to collect turbine control oil system data. Minor equipment malfunctions occurred during the rapid shutdown, including the slipping of control rod J-11.

A post shift meeting was held to summarize the transient and ensure no procedural steps and equipment malfunction were not accounted for. The subsequent cooldown proved to be event free. Plant is now in hot shutdown conditions.

- The operators should be commended for the prompt analysis of the problem.
- Strong communications and attention to detail was evident throughout the transient.
- Creativity in problem solving was strong factor in mitigating the transient.
- Team work and group cooperation between nuclear/turbine operators proved to be extremely beneficial.
- PSN, APSN and RCO maintained firm leadership roles during the transient. There was no doubt who was in charge.
- Equipment operation was excellent during the transient.
- A fine example of professionalism.

F. Recommendations

None

Completed By: Garry A. Harris
MOS ObserverDate: 02/08/88Reviewed By: [Signature]
Operations Superintendent- NuclearDate: 2/1/88Management
Review By:JB 1-16/88 CMB 1-16/88 1
PM-N Date SVP Date VP Date

FINAL PAGE



To: Operations Superintendent - Nuclear

Date: 02/07-08/88

From: Daniel E. Meils
(MOS Observer)Shift: ☐ Day
☒ Night

A. Plant evolutions observed

- Unit 4 Controlled ramp down
- Unit 4 Left Turbine Stop Valve closure
- Steam Generator level control
- Plant cooldown to below 350°F
- PSN turnover
- Shift briefing
- "3B" Battery Charger repair

B. Immediate safety problems

None

C. Questionable work practice

None

D. Area(s) for improvement

1. Unit 4 left turbine stop valve went shut unexpectedly.
2. Steam Generator level control 0-15% power is extremely hard to maintain.
3. #6 (F) Gas Decay Tank is unavailable for use during plant transients.

E. Professionalism, Summary of Shift, Comments

- Communications continue to be excellent. The challenge of having a turbine stop valve going shut during a controlled shutdown was handled by the on-shift operators with a great deal of professionalism and camaraderie. Not only was the unit recovered from a greater than 400 megawatt swing, but when the unit was stabilized after the event, an enthusiastic cheer of elation was shared by all the operators involved in "saving the Unit". With the Unit stabilized a more subdued professional atmosphere was regained in order to complete the shutdown.
- An excellent critique was held after the unit was off line to identify all problems encountered during this event.

F. Recommendations

1. Evaluate closure of Unit 4 left Turbine Stop Valve - determine and correct root cause (See D.1).
2. Evaluate, engineer, budget and install a low power Steam Generator level control system (See D.2).
3. Restore #6 (F) Gas Decay Tank to "service available" status (See D.3).

Completed By: Daniel E. Meills
MOS Observer

Date: 02/08/88

Reviewed By: [Signature]
Operations Superintendent- Nuclear

Date: 12/8/88

Management
Review By:

(1/1) 12/8/88 (1/1) 12/8/88 1
PM-N Date SVP Date VP Date

MANAGEMENT INITIAL RESPONSE